Amendments to the Specification

[0034] Turning now to the catheter 50 used with the guiding assembly 90, FIG. 9 is a sectional view of the catheter 50, including a nearly coaxially arranged guidewire lumen 58 and inflation lumen 54. Both lumens 54, 58 are formed from a single continuous shaft wall 56 that may be formed from suitable biomedical grade materials such as polyethylene, cross-linked polyethylene, polyolefins, polyamides, blends of polyamides and polyolefins, fluoropolymers, polyesters, polyketones, polyimides, polysulphones, polyoxymethylenes, and compatibilizers based on polyolefins, including grafted polyolefins, and other comparable materials. A lubrication additive may also be used with any polymer and may include polyethylene micro-powders, fluoropolymers, silicone based oils, fluoro-ether oils, molybdenum disulphide and polyethylene oxide. Additionally, a reinforcing additive may be used such as nano-clays, graphite, carbon fibers, glass fibers, and polymeric fibers. The shaft wall 56 that defines the entire inflation lumen 54 and guidewire lumen 58 is depicted in FIG. 9 as having a substantially uniform thickness, which may simplify the catheter manufacturing process and reduce the associated costs. However, the shaft wall 56 may also be formed with a varying thickness to provide strength to the catheter 50 as needed.

[0037] The guideway 52 is defined by approximately parallel wall segments 59 that are adapted to be flexibly spaced apart to provide transverse access for the guidewire to enter and exit the guidewire lumen 58. When the catheter ~~100~~ 50 is tightened in a Y-adapter, the wall segments 59 will rest flatly against each other, thereby preventing back-bleed and also sealing the guideway 52 and reducing or eliminating any clearance around the guidewire. Also, if a physician draws a vacuum on the Y-adapter to draw blood from the patient using an inflation syringe, there is a danger that a gas may be drawn into the Y-adapter through any gap that exists between the guidewire 30 and the catheter shaft wall 56. With the wall segments 59 sealing the guideway 52, and eliminating space around the guidewire 30, gas aspiration is also improved.

[0044] In an exemplary embodiment of the invention, the tool 60 is a rigid body and is formed entirely from a metallic material. The strong and rigid metal provides the advantages of ease in placing the tool 60 in a desired location and thereafter manipulating the tool to raise the

guidewire 60. If the tool will be distally extended a significant distance into the catheter 50 then the metallic material can be somewhat bendable although the tool 60 should be rigid enough to easily manipulate the leading edge when holding the tool 60 ~~from a~~ from an upstream or proximal point. The tool 60 can be formed from a wire mandrel and can be as long or as rigid as necessary to perform the desired function. One advantage of a substantially elongated and rigid tool 60 is its ability to perform a stiffening function for at least some catheter length that is proximal to the catheter guiding assembly 100. For instance, without the tool 60 inserted into the guidewire lumen 58, the catheter is advanced by grasping the catheter 50 a short distance from the guiding assembly 90 and pushing the catheter into the guiding assembly. With a long and rigid tool 60 inserted into the guidewire lumen 58, the advancing force can be applied to the catheter 50 much farther away from the guiding assembly 90, and consequently a longer catheter length can be advanced for each push.